

Date: Mon, 31 Oct 94 04:30:19 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: List
Subject: Ham-Ant Digest V94 #361
To: Ham-Ant

Ham-Ant Digest Mon, 31 Oct 94 Volume 94 : Issue 361

Today's Topics:

Advice needed for loss in BNC<->S0-239 connector
50 Ohms Why ? (3 msgs)
7db for \$7
ACURATE ROTATORS ???
AEA IsoLoop Autotuner - need manual
Antenna Analyzers/Old QST magazines (2 msgs)
Gamma-Match
HARDLINE...which one!?
How well will it work?
Kepler Data.
Need help with receiving SW from Israel.
Need recommendation on Good Base Station Antenna
PIN diodes for HF array
Q: on coax, Was Re: How's the Wire ... Man?
RS Speaker Mics [WAS Re: Radio Shack Antennas?]
Test, please ignore
Would a full wave antenna be better?

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 27 Oct 1994 17:00:00 GMT
From: clint.bradford@ectech.com (Clint Bradford)
Subject: ### Advice needed for loss in BNC<->S0-239 connector

S>Path: planet!isdnlm.mtsu.edu!darwin.sura.net!udel!news.intercon.com!panix!zi
>From: s2202629@np.ac.sg (Teh Aik Wen)

Is this the J-Pole plan you're talking about???

Use a chassis mount BNC - if you need it to be a BNC. Otherwise, make up your own cable with appropriate connectors.

I have made several J-Poles - some encapsulated in PVC, some more "portable" roll-up models.

Yes - you'll lose a little with adapters.

* QMPro 1.53 * Useless laws weaken the necessary laws.

Date: Fri, 28 Oct 94 16:39:29 GMT
From: mark@ve6mgs.ampr.org (Mark G. Salyzyn)
Subject: 50 Ohms Why ?

ee17@csu.napier.ac.uk (Alastair "J." Downs) writes:

>Why choose 50 ohms as the standard characteristic impedance for RF kit ?

10. Albatross

9. 100W@50ohms results in 77 volts, 100W@450ohms results in 270 volts

8. It hertz if otherwise

7. quarter wave with 45 degree droop in radials, or incomplete groundplanes results in a 50 ohm impedance

6. because the abos are watching

5. A double zepp fed by a 4:1 balun results in a 50 ohm impedance

4. depressed dielectric syndrome of the inventor of Co-Ax

3. A center fed dipole is within a 1.2:1 match of 50 ohm impedance

2. Dr. Alan Kohol discussed this in his treatise on the Institutional uses of ethanol as a dielectric, finding that the natural impedance of the barley based suspensions was 50 ums.

1. World War II and the Union High Frequency connector's popularity increased the use of RG58 and RG8 Co-Ax, and the surplus equipment resulting from that decision set the market for years to come.

Ciao -- 73 de VE6MGS/Mark

Date: Fri, 28 Oct 94 12:20:17 GMT
From: ee17@csu.napier.ac.uk (Alastair "J." Downs)
Subject: 50 Ohms Why ?

This has probably been asked before (but at least it may have been clarified)

Why choose 50 ohms as the stanard characteristic impedance for RF kit ?

regards,

```
%% Alastair J. Downs      \_ \_ \_ \_  Edinburgh, Festival City,      %%
%% a.downs@csu.napier.ac.uk \ | \ \ \ \  Athens of the North, if you've %%
%% gm6nei@gb7edn.#77.gbr.eu  |          never been, you won't know      %%
%% gm6nei.ampr.org[44.131.13.51]/| \    what you're missing.....%%
```

Date: Fri, 28 Oct 1994 19:39:18 -0400
From: frederick.mckenzie-1@pp.ksc.nasa.gov (Fred McKenzie)
Subject: 50 Ohms Why ?

In article <CyE0nA.BB4@ncifcrf.gov>, mack@ncifcrf.gov (Joe Mack) wrote:
> In article <6809.9410281220@csu.napier.ac.uk> ee17@csu.napier.ac.uk
(Alastair "J." Downs) writes:
> >Why choose 50 ohms as the stanard characteristic impedance for RF kit ?
> It's a compromise. The minimum attenuation occurs at 70ohms (which is
> presumably why cable TV companies here use 70ohm cable), the maximum
> power handling is at (I think) 37ohms and so 50ohms is about in the
> middle.

Joe & Alastair-

The way I remember from Transmission Lines Class in 1969, minimum loss and maximum power handling can be derived in terms of optimum ratios of conductors. For air dielectric, this turns out to give 75 Ohms for minimum loss and around 52 Ohms for maximum power handling.

For a real dielectric, the impedance is lower. For solid polyethylene dielectric, minimum loss becomes 50 Ohms, and maximum power is probably the 37 Ohm figure you mentioned.

I suspect the 75 Ohm cable is still popular because it matches a theoretical dipole (72 Ohms). The 50 Ohm cable is most likely dominant because of military usage. The military probably chose 50 Ohms on the basis of both minimum loss with polyethylene dielectric and maximum power with air.

73, Fred, K4DII

Date: Sat, 29 Oct 94 08:24:36 CST
From: n8naa@n8naa.sat.tx.us (Ronald D. Hackett)
Subject: 7db for \$7

bsplaine@dogxray.sr.hp.com (Bill Splaine) writes:

> I was listening to a conversation on 2m last nite and should have, but didn't
> break in... they wer talking about an antenna found in a somewhat recent (?)
> publication. The article title is about a simple antenna, yagi type I think,
> that is supposed to be pretty good and only \$7 (less, I guess w/ good junk
> box).... Has anyone else seen this article? Where was it?

The article you are refering to was in the April 93 edition of QST. I
built one myself, and it works well. Good luck.

73 de Ron
n8naa

Ronald D. Hackett Internet: r.hackett@ieee.org
The Packet Rat BBS Packet Radio: N8NAA@K3WGF.#SAT.TX.USA.NOAM
San Antonio, Texas, USA AMPRnet: n8naa@n8naa.ampr.org
Phone: (210) 494-2849 Fidonet: 1:387/340

Date: Sat, 29 Oct 94 04:29:05 -0500
From: Ronald Miranda <ron11218@delphi.com>
Subject: ACURATE ROTATORS ???

I can't help with rotor info but I have the yeasu 5400b rotator
and have
noticed that for accuracy you will need a rotator that can soft
start and
stop. the yeasu dosn't. also a rotator that can move the way a
telescope
does and slowly track the moon might be useful, most rotators
have only
a single speed and for satallite tracking its too fast a
multispeed rotator
would be nice, especially if it could be computer controlled.

73 Ron n6tft

Date: Sat, 29 Oct 94 15:00:32 -0500
From: mlazaroff@delphi.com
Subject: AEA IsoLoop Autotuner - need manual

I recently bought the autotuner for the AEA IsoLoop, but have misplaced the manual that came with it. If anyone has one, I'll gladly pay reasonable copying and postage costs for a copy. Thanks!

73, Mike Lazaroff KB3RG
PO Box 464
Moffett Field, CA 94035

Please let me know if you can send a copy, or I'll copy yours and return it - thanks!
mlazaroff @ delphi.com

Date: Sat, 29 Oct 94 04:04:16 -0500
From: Ronald Miranda <ron11218@delphi.com>
Subject: Antenna Analyzers/Old QST magazines

Hang Kim Yam <hky@np.ac.sg> writes:

>Antenna Analyzers

>-----

>I was browsing through the CQ Amateur Radio magazine (August 94) and noticed
>the following products for analyzing antennae:

>

>SWR-121 Antenna Analyzers by AEA, Inc.

I also have looked longingly at the swr-121v/u but its not really an antenna analyzer, rather it's a swr analyzer, now if it could plot r+jx or r-jx i'd buy it in a hot second but at \$400 dollars its difficult to justify, but he who dies with the most toys wins so I will probably get one. if/when I do I will post a report on it. I just ordered the new aea dm1 deviation meter interested in a user report on that? you mentioned a mfj antenna bridge but not the model. I have and use a mfj 249, it works well to analyze swr. and a palomar noise bridge to get r+jx but only works to 100mhz. and I do mostly vhf and uhf. if I could find one that worked above 100 mhz I would be satisfied.

73 Ron n6tft

Date: Sat, 29 Oct 94 04:09:34 -0500
From: Ronald Miranda <ron11218@delphi.com>
Subject: Antenna Analyzers/Old QST magazines

havn't heard of the auttek meter, where/who sells it. is there
and advertisement
what mag and issue! or does auttek list a phone number.

73 Ron n6tft

Date: 30 Oct 1994 21:29:56 GMT
From: wk@sam.frc.maf.govt.nz (Wilbert Knol)
Subject: Gamma-Match

I have used antenna modelling software in the past to get a starting point for shorting bar position, capacitor value, separation between the gamma rods and the element etc. You will still have to tweak it empirically by pointing the beam skywards, having it in the clear etc. as much as you can.

The ARRL Antenna Book has guidelines for gamma dimensions on page 26-17. Use 0.7 percent of the wave length for the gap between gamma and element. If this is too small you won't be able to match...

You can start off by having a trim cap at the feed point and a continuous gamma rod with a makeshift sliding shorting bar which will clip onto the different sections of your tapered driven element. Once you have found the match, measure the cap and calculate an equivalent coaxial cap. Make up a proper shorting bar for that particular diameter of the driven element section.

My last coaxial gamma capacitor was made of a solid 6 mm Al inner rod, held inside a 19 mm OD Al tube by PVC tape (turn up PTFE disks if you want to do a real nice job...) Make sure you have drain holes between the disks to let condensation out, and seal the ends

Good luck... Wilbert, ZL2BSJ.

--
Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

Date: 30 Oct 1994 15:19:28 -0500
From: c002@ns2.CC.Lehigh.EDU (David M. Roseman)
Subject: HARDLINE...which one!?

ok, now i know there are TWO types of hardline coax...
basic CATV stuff, and radio stuff.
but can i use the CATV type with out any major drawbacks?
cause it's easier to get FREE, CATV then radio type...so...
which is it!?

thanks

DAvid

David Roseman	c002@lehigh.edu
SysOp of NODE 3 BBS	The Flying HAm - BBS
Running OBV/2 Software	KBR-9318 - CB
	N3SQE/SVARC - Ham
HAmmy in IRC	N3SQE@N3IQD.FN20GO.PA.USA.NA - Packet

Date: Sun, 30 Oct 1994 03:13:34 +8
From: bodafu@ccvax.sinica.edu.tw (David L. Bergart)
Subject: How well will it work?

In article <27OCT199408150377@ewirb-wr> soderman@ewirb-wr (SODERMAN.WALTER)
asks:

>If I run coax to an inverted vee dipole arrangement that slopes down from the
>peak of my roof to a couple of trees in the yard, and I've got a built-in tuner
>in my xcvr, and I cut the inverted vee dipole for the 80 meter band, how well
>will this configuration work on 40 meters? Do I have to have open wire feeder
>instead of coax feeder to make this dipole work on more than one band?

When you operate a center-fed 80 meter 1/2 wave dipole on 40 meters, it is
actually working as two end-fed 40 meter 1/2 wave dipoles. This works, but the
feedpoint impedance of an endfed 1/2 wave is very high (something like
6000 ohms, if memory serves), so coax won't cut the mustard. BTW, to do this,
the dipole must be the single wire kind. A folded dipole won't work at even
multiples of the fundamental frequency because then the current is out of
phase in the two wires and cancels---in other words, rather than being an
antenna, it acts like a transmission line to nowhere.

Both kinds work okay on odd multiples of the fundamental. The feedpoint impedance is about the same as at the fundamental frequency, but the bandwidth is reduced because the reactance changes more rapidly for a given change in frequency away from resonance.

David

____D__a__v__i__d____B__e__r__g__a__r__t_____
bodafu@ccvax.sinica.edu.tw

Date: Sun, 30 Oct 1994 16:36:15 +0000
From: andy@kiffa.demon.co.uk (Andy Noctor)
Subject: Kepler Data.

Hello to all on the group from a very wet & windy Isle of Wight UK.

Would anyone know where I can obtain up to date Keplerian Elements for polar orbiting satellites? Two years ago these were easy to find on the net, but now, who knows?

I'm using John E. Hoot's PC GOES/WEFAX 3.+ software, which accepts KEPLER.DAT files. NASA may perhaps supply two line format files, but when looking through the WWW NASA menu's, its a daunting prospect, having to search the entire contents!!! AMSAT or NORAD.....where?

Can anyone point me in the best direction?

Thank's in anticipation.

Please reply to:-

--

andy kiffa@demon.co.uk

Date: Sun, 30 Oct 1994 11:38:09 EST
From: Eli Kizhnerman <ELIBC@CUNYVM.CUNY.EDU>
Subject: Need help with recieving SW from Israel.

Hi,

Can someone advice me what kind of an antenna I should get to recieve SW broadcasts from Israel in NY(Staten Isl.). I have a regular "boom box" with SW1/SW2 bands. My room is in the basement. I was thinking about hooking up

the TV antena in my house to my stereo, is that possible?? do I need a special converter? Will it improve my SW reception?

Thanks in advance,

..Eli K..

Date: 30 Oct 1994 16:09:05 -0500
From: wwhitby@aol.com (Wwhitby)
Subject: Need recommendation on Good Base Station Antenna

I am finally escaping from this apartment complex and moving into a house. After we are settled, I plan on putting up a mast with an antenna on top. I need a good recommendation for a 2m/73cm base antenna with modest gain that doesn't weigh a lot. The house is a rental, so I don't plan on setting up a tower and am limited to a mast in the backyard. Any help you can give would be greatly appreciated.

tnx & 73s de KE4ITL

Warren Whitby
wwhitby@aol.com

Date: 31 Oct 1994 06:43:50 GMT
From: n0dh@comtch.iew.com (D.C. Henderson)
Subject: PIN diodes for HF array

Anyone out there have any experience with PIN diodes for switching matching networks in an steerable HF phased array?

Specifically on 160 and 80 meters at full legal power limits? Diodes you used? etc. etc.

Thanks
Dave
N0DH

Date: Fri, 28 Oct 1994 16:21:53 EDT
From: CC015012@brownvm.brown.edu ()
Subject: Q: on coax, Was Re: How's the Wire ... Man?

I found on the sidewalk a sizeable roll of unmarked coax. It's identical to some CATV/COAX cable I have: Belden M 9058 18AWG 75 Ohms. The center conductor is copper clad steel. The shield is

foil/braid/foil but I'm unsure of the material here as it is not copper colored and when cutting it I can't see any copper colored core. (Just like the Belden).

I looked through a few books but I can't quite identify this cable in terms of RG-xxx. Newark doesn't list this cable.

Long time ago I asked about how to improve my FM reception here and got replies saying try the open $1/4$ lambda stub to get rid of the offensive station. I tried but could not null the station out. Without a null I never knew where lambda/4 was with respect to the coax cable. The reception was still strong without any antenna connected. I had already disabled the pwr-amp in my receiver so that it was easy for my to put the receiver in a metal chest with no AC cord and have the tuner work for about a minute. With a battery power amplifier and a speaker inside I could hear the station being received inside (albeit not perfectly sealed metal chest)

Now, with shorter days, my interest in antenna work has resumed. I again tried the open $1/4$ stub trick but this time I tuned out the distant weak station. This worked fine and my confidence in $1/4$ stubs was restored. With the coax above I find the velocity factor to be dead on 0.75.

My question now how does this particular coax with not much visible copper rate in terms of attenuation/100 feet ? Also, am I right in assuming the shield is 100% ? (The reason I wonder is that if the foil is made of aluminum isn't there a chance the electrical contact between braid and foil is hampered by AlO₂ ?

thanks,
john

Date: Sat, 29 Oct 1994 05:01:00 GMT
From: clint.bradford@ectech.com (Clint Bradford)
Subject: RS Speaker Mics [WAS Re: Radio Shack Antennas?]

F>Path: planet!isdnl.in.mtsu.edu!darwin.sura.net!tulane!ames!niven.ksc.nasa.gov!
>From: frederick.mckenzie-1@kmail.ksc.nasa.gov (Fred McKenzie)
>Newsgroups: rec.radio.amateur.antenna
>Subject: Re: RS Speaker Mics [WAS Re: Radio Shack Antennas?]
>Message-ID: <frederick.mckenzie-1-2710941702180001@k4dii.ksc.nasa.gov>

F>For your info, the Icom speaker-mike may not key the HTX-202 unless you
>change a resistor inside.

The Icom HM-54 Speaker/Mike works well in the Icom/Tandy-designed HTX-202.

* QMPPro 1.53 * Thesaurus: ancient reptile with an excellent vocabulary.

Date: Fri, 28 Oct 1994 23:34:32 -0700
From: mont@netcom.com (Mont Pierce)
Subject: Test, please ignore

testing email path to post to usenet.

Date: 29 Oct 1994 01:21:36 GMT
From: joliver@random.ucs.mun.ca (John Oliver)
Subject: Would a full wave antenna be better?

Date: Sat, 29 Oct 94 04:19:13 -0500
From: Ronald Miranda <ron11218@delphi.com>

References<37vjjc\$8vq@newsbf01.news.aol.com>
<1994Oct18.151414.7898@ke4zv.atl.ga.us>, <1994Oct19.140936.21835@arrl.org>
Subject: Re: Antenna Analyzers/Old QST magazines

Zack Lau (KH6CP) <zlau@arrl.org> writes:

>Zack Lau KH6CP/1 2 way QRP WAS
> 8 States on 10 GHz
>Internet: zlau@arrl.org 10 grids on 2304 MHz

I notice that your active on 10 gigs, I would like to become active on 10 gigs and wondered if you could give any equip. recomendations and why. what would you buy if you could afford it. I am also interested in using it on point to point packet.

73 Ron n6tft

Date: 28 Oct 1994 16:38:06 GMT
From: moritz@ipers1.e-technik.uni-stuttgart.de ()

References<Cy785B.16F@ncifcrf.gov> <38jl1i\$b73@nntpd.lkg.dec.com>,
<CSLE87-281094091151@145.39.1.10>
Subject: Re: ACURATE ROTATORS ???

The moon can be for the system under discussion be treated as a point source,
and the statement about the blunt lobe can be further precized:

the 3dB beam width will be about 13 degree, and the lobe may be reasonably
well be approximated by a parabola 13 degree across at 3 dB loss.
So it can be shown, that a degree or two off will not make a significant
difference.

Approach it from another direction: for the system in question adjusting every
10 min. will be perfectly alright. Work it out from there.

73, Moritz

End of Ham-Ant Digest V94 #361
